



SKIN & CANCER FOUNDATION AUSTRALIA



MOHS MICROGRAPHIC SURGERY
patient information

WHAT IS MOHS MICROGRAPHIC SURGERY?

Mohs micrographic surgery is named in honour of the physician who developed the basic technique, Dr Frederic Mohs at the University of Wisconsin in America in the 1950s. You may hear it called Mohs surgery, chemosurgery, microscopically controlled excision or Mohs micrographic surgery — they're all the same. In the years since Dr Mohs pioneered the procedure, many improvements and refinements have contributed to make this surgery a safe and highly effective means of treating skin cancers.

The main difference between Mohs surgery and other methods of removing skin cancers is microscopic control. The major advantage of Mohs surgery over other skin cancer surgery is that the tumour is completely removed with a high degree of precision but also with minimal loss of normal tissue. In Mohs surgery, multiple

thin, horizontal layers of the cancer are removed and each layer is carefully identified and 'mapped' by the surgeon so that its exact location can be pinpointed on the wound.

Every layer of tissue removed is inspected under the microscope for evidence of cancer cells. As long as cancer cells remain anywhere within the specimen, the surgeon continues to remove and examine layers of tissue until no cancer cells are present. Because each layer is examined microscopically, dermatologists can be confident that all the cancer has been eradicated and that no tumour nests have been left behind. In addition, only the cancerous tissue is removed, saving as much normal skin as possible. Studies have shown that greater than 95% of all patients treated at the Skin & Cancer Foundation by Mohs surgery are cured of cancer.

WHEN IS MOHS MICROGRAPHIC SURGERY INDICATED?

The concept of Mohs micrographic surgery was developed more than 50 years ago. Mohs surgery was first introduced in Australia in the 1970s and is now available in most capital cities.

Mohs surgery is now universally recognised as a precise method for treating skin cancers of the face and other cosmetically sensitive areas, because it can eliminate all the cancer cells while causing minimal damage to the surrounding normal skin.

Mohs surgery is also ideal for the removal of recurrent skin cancers — tumours that reappear after previous treatment and can plague a patient repeatedly. While skin cancers are usually visible to the patient, individual cancer cells are microscopic and any cells left behind can cause the tumour to reappear. The tumour may spread beyond its obvious external margins, with 'nests' of cells growing in unpredictable areas. With the Mohs technique, all tumour nests can be identified and removed with a high degree of accuracy, so that high cure rates are possible even when the tumour is recurrent.

A dermatologist is best trained to determine when this technique should be used rather than other procedures.

WHAT IS THE CURE RATE?

Using the Mohs surgery technique, the cure rate is greater than 95%, even if other forms of treatment have failed; however, no one can guarantee a cure rate of 100%.

WHO PERFORMS MOHS SURGERY?

Many dermatologists throughout Australia have been trained in skin cancer surgery. When patients require more extensive surgery, however, they are referred to a qualified Mohs surgeon. The period of training to be a qualified Mohs surgeon is a one-year fellowship, during which the dermatologist acquires extensive experience with all aspects of the technique.



THE MOHS SURGERY TEAM

Mohs surgery at the Skin & Cancer Foundation Australia clinics involves a team of people. Your Mohs surgeon is the head of that team but will be supported by a group of highly skilled and specially trained doctors, nurses and technicians.

The doctors working with your Mohs surgeon may include a registrar (trainee dermatologist) and a Mohs surgery fellow. The Skin & Cancer Foundation Australia is an internationally recognised Mohs surgery unit performing over 1500 Mohs surgery cases per year. We often have visiting dermatologists from around the world observing the surgery.

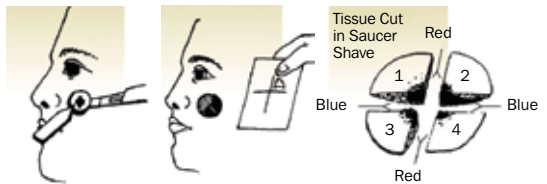
The Mohs team care about you and want to help in relieving any anxiety or fear you may have by making your surgery day as comfortable and relaxed as possible.

HOW IS THE SURGERY PERFORMED?

IF YOU HAVE ANY CONCERNS ABOUT YOUR SURGERY, PLEASE CONTACT THE NURSING STAFF AT THE FOUNDATION ON 8833 3000 (MONDAY TO FRIDAY, 7.00AM–5.30PM) BEFORE YOUR SURGERY DAY.

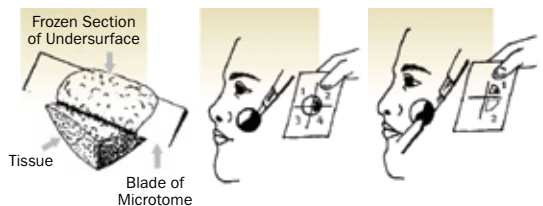
The suspicious skin lesion is treated with a local anaesthetic so there is no feeling of pain in the area. A thin piece of tissue is removed and carefully divided into pieces that will fit on a microscope slide.

The edges are then marked with specially coloured dyes, a map of the tissue which has been removed is made and the tissue is frozen by a pathology technician. Thin slices can then be made from the frozen tissue and examined under the microscope by the dermatologist.



A pressure dressing is applied to the surgical site and the patient is asked to wait in a recovery area while the tissue is being processed.

The doctor will examine the slides under the microscope and be able to tell if any tumour is present. If cancer cells remain, the patient is taken back to the procedure room where another layer of tissue is removed. The procedure is repeated as often as necessary until no cancer cells remain. This process preserves as much healthy skin as possible. After the first layer is taken, a long-acting anaesthetic is used to keep the area numb for many hours.





HOW LONG WILL THE SURGERY TAKE?

The removal of each layer of tissue takes approximately 1–2 hours. Only 20–30 minutes of that time is spent in the actual surgical procedure; the remaining time is needed for slide preparation and for the doctor to read the slides. On average, the surgery usually requires removal of 2–3 layers of tissue (called stages). The whole process including sewing up the wound, usually takes 4–6 hours. Some difficult or larger cases may take longer.

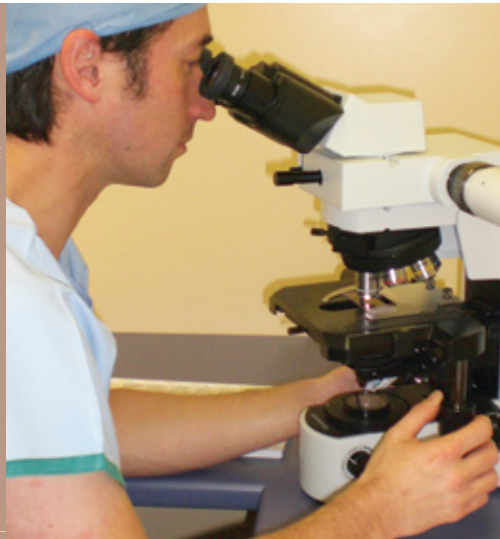


WHAT HAPPENS AFTER THE TUMOUR HAS BEEN REMOVED?

After Mohs surgery you will be left with a surgical wound. This wound may be repaired in one of the following ways:

- closing the wound, or part of the wound, with stitches
- various skin closures, such as grafts and flaps, or reconstructive procedures
- healing by spontaneous granulation
- referral for reconstruction to a plastic or oculoplastic surgeon.

Upon completion of your surgery, your doctor will recommend which of these choices will be best for your individual case.



WHAT HAPPENS IF THE WOUND IS CLOSED WITH STITCHES?

A wound may be stitched up in a straight line (side-to-side closure) or with a geometric line (flap closure) or with a skin graft. Side-to-side closures are more common for smaller wounds. This involves some adjustment of the wound and stitching the edges together. The procedure speeds healing and offers a good cosmetic result: for example, the scar can be hidden in a wrinkle line. The scar is always larger than the size of the skin cancer.

With a flap, skin is moved from an area next to the surgical site. This leads to more stitches than you may have anticipated and a scar with a geometric shaped closure such as a T, Z, or W etc. The final cosmetic result is usually very pleasing.

With grafts, a second wound is created to obtain skin (this is the donor site). This is usually taken from a 'non-cosmetic' site (from behind the ear, for example) to minimise scarring. The stitches will remain in place for approximately 5–14 days, depending on the site of the lesion.

Specific wound care instructions will be given to you on the day of surgery.

WHAT IS SPONTANEOUS GRANULATION?

Healing by spontaneous granulation involves letting the wound heal itself.

Experience has taught us that there are certain areas of the body where nature will heal a wound as nicely as any further surgical procedure. If the resultant scar is unacceptable, some form of cosmetic surgery can be performed at a later date.

If the wound is allowed to granulate it usually heals in four to eight weeks and requires daily dressing changes.

WHAT CAN I EXPECT FOLLOWING SURGERY?

Your post-operative care will be thoroughly explained to you by a nurse and you will also be given written instructions.

Pain

It is usual to expect some discomfort after your surgery. We request that you not take aspirin or dispirin but use Panadol or Panadeine for pain relief.

Bleeding

Bleeding occurs occasionally following surgery. If this should happen, the bleeding can be controlled by the use of pressure. Leave the dressing in place and apply pressure with a gauze or similar pad. You may support yourself against a couple of pillows in a semi-upright position and apply constant pressure over the bleeding site for 20 minutes.

Swelling

Swelling is common around the surgical site. It can be minimised by applying ice packs (or frozen peas) on the area for 10 minutes every hour for at up to 24 hours after surgery.

Wound care

You will be given instructions on how to care for your wound at the end of your surgery and arrangements will also be made for your sutures to be removed. Some patients will be asked to return to the Foundation the day after surgery to have their wound checked.

Sporting activities/travel

Do not make arrangements for sporting activities or travel after your surgery as you will need to rest for at least one week to prevent post-operative complications. We also advise that you do not undertake strenuous exercise for least one week or more after your sutures have been removed.

RISKS AND COMPLICATIONS

Our number one priority is total removal of the skin cancer. Incompletely removed skin cancers can recur and in some cases spread to other parts of the body.

All surgery carries risks and can develop complications. After your Mohs surgery, these may include bruising, swelling, bleeding, infections, numbness, scarring, and skin tightening or stretching. Most of these problems will resolve with time but you will always be left with a scar.

Swelling and bruising are very common, especially when surgery is performed around the eyes and nose. These conditions subside by keeping your head elevated and by using ice-packs regularly for the first 24 hours following surgery. If redness and pain don't subside within two days, or if the wound begins to drain or discharge, you may have an infection and you should contact your doctor.

Nerve damage is usually temporary and recovers, but can be permanent in some cases if the cancer is extensive and the nerve is involved. Scarring from the surgery usually settles well. Flaps and grafts take time to heal but improve significantly within 3–6 months. They may require massage, cortisone injections or further surgery to improve the scar. Sometimes the extent of skin cancer and the complexity of the wound may require a larger reconstruction, which can leave a more obvious scar. Your doctor can discuss with you a range of options to deal with this circumstance.



HOW DO I PREPARE FOR THE DAY OF SURGERY?

The best preparation for Mohs surgery is a good night's rest followed by a substantial breakfast.

Wash your hair the night before, or morning of your surgery

Do not wear make-up on your surgery day.

Wear comfortable, loose-fitting clothes, such as a tracksuit, slacks, a cardigan, a short-sleeved shirt or blouse and comfortable shoes (shoes stay on your feet). An old shirt is preferable.

Because you will be with us for at least half a day, please bring a packed lunch and it is wise to bring a book or magazine to read.

Tea/coffee and biscuits are provided.

At home, please have Panadol or Panadeine for pain relief, and an ice-pack or frozen peas pack, ready to use after you return home from your surgery.

Do not stop taking any of your medication unless instructed by your surgeon. Discontinue vitamin and mineral therapy for at least a week before the surgery.

It is most important that you do not go home alone.

Please arrange for a relative or friend to accompany you either by private transport or taxi. You must not go home on public transport or drive following your surgery.



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